



UIC813

Preliminary

CMOS IC

3-PIN MICROPROCESSOR RESET CIRCUITS

DESCRIPTION

The UTC **UIC813** series are resetting circuits which can monitor power supplies especially in microprocessor based systems.

In normal operation, the UTC **UIC813** series can assert a reset under any of the following situation: the power supply drops below a designated reset threshold level (which is available for 3V or 3.3V or 5V system).

There is an internal active high RESET output which has already been guaranteed to remain asserted for at 140ms least while V_{CC} rises above the designed threshold level.

FEATURES

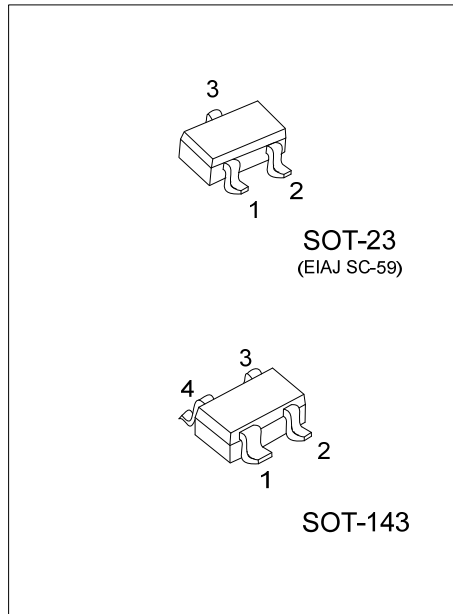
- * Voltage monitor for 3V or 3.3V or 5V power supplies
- * Valid RESET remains with V_{CC} as low as 1V
- * Typical supply current: 10 μ A
- * Fixed 140ms minimum reset pulse width
- * Push-Pull RESET Active High Output

ORDERING INFORMATION

Ordering Number		Package	Pin Assignment				Packing
Lead Free	Halogen Free		1	2	3	4	
UIC813L-x-AE3-3-R	UIC813G-x-AE3-3-R	SOT-23	GND	RESET	V_{CC}	-	Tape Reel
UIC813L-x-AE3-5-R	UIC813G-x-AE3-5-R	SOT-23	RESET	GND	V_{CC}	-	Tape Reel
UIC813L-x-AD4-R	UIC813G-x-AD4-R	SOT-143	GND	RESET	MR	V_{CC}	Tape Reel

Note: x: Output Voltage, refer to Marking Information.

<p>UIC813G-x-AE3-x-R</p> <p>(1) Packing Type (2) Pin Assignment (3) Package Type (4) Output Voltage Code (5) Green Package</p>	<p>(1) R: Tape Reel (2) refer to Pin Assignment (3) AE3: SOT-23, AD4: SOT-143 (4) x: Refer to Marking Information (5) G: Halogen Free and Lead Free, L: Lead Free</p>
--	---



MARKING INFORMATION

PACKAGE	VOLTAGE CODE	MARKING
SOT23	A: 2.63V B: 2.93V C: 3.08V D: 4.00V E: 4.38V F: 4.63V	
SOT-143		

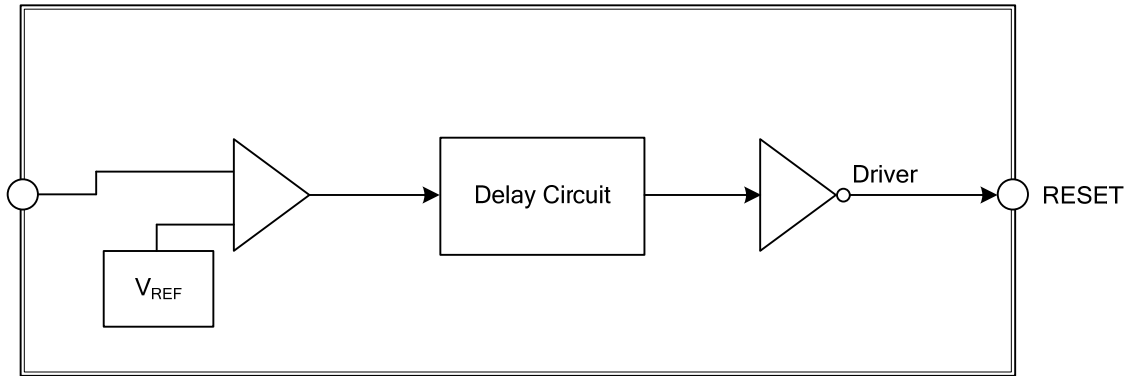
PIN CONFIGURATION

SOT-143	SOT-23	
	AE3-3	AE3-5

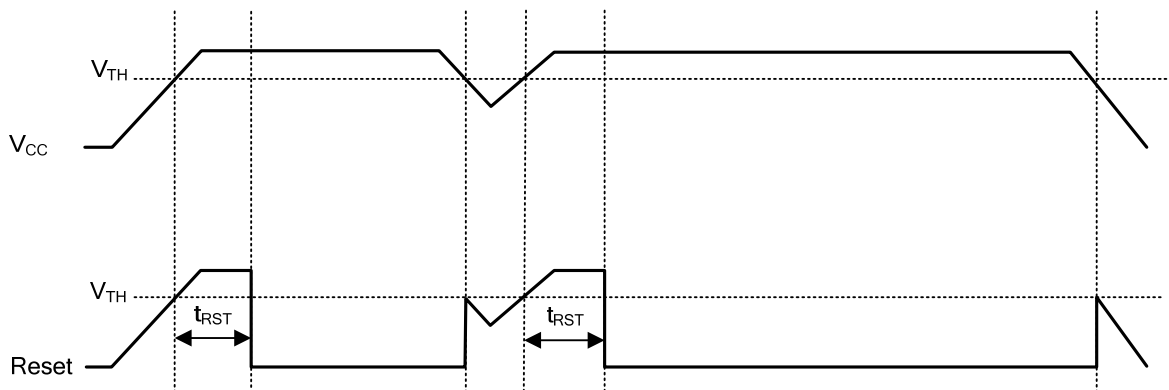
PIN DESCRIPTION

PIN NAME	DESCRIPTION
GND	Ground
RESET	Reset Output Pin
V _{CC}	Input of power supply
NC	No Connection

■ BLOCK DIAGRAM



■ FUNCTIONAL DIAGRAM



■ ABSOLUTE MAXIMUM RATINGS

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V_{CC}	-0.3~+6.0	V
RESET (push-pull)	V_{RESET}	-0.3~($V_{CC}+0.3$)	V
Input Current, V_{CC}	I_{CC}	20	mA
Output Current, RESET	I_{OUT}	20	mA
Rate of Rise	$V_{CC(RR)}$	100	V/ μ s
Continuous Power Dissipation ($T_A=+70^\circ\text{C}$), De-rate 4mW/ $^\circ\text{C}$ Above +70 $^\circ\text{C}$	SOT-23	P_D	360
	SOT-143		320
Operating Junction Temperature Range	T_{OPR}	-40 ~ +105	$^\circ\text{C}$
Storage Temperature Range	T_{STG}	-65 ~ +150	$^\circ\text{C}$

Note: Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.

■ ELECTRICAL CHARACTERISTICS

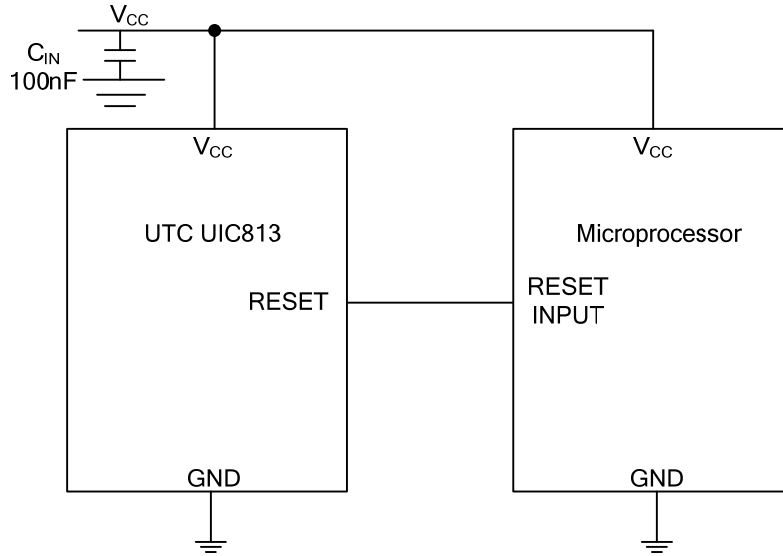
($T_A=-40\sim 85^\circ\text{C}$ unless otherwise note. Typical values are at $T_A=+25^\circ\text{C}$) (Note 1)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT	
V_{CC} Range	V_{CC}	$T_A=0^\circ\text{C}\sim +70^\circ\text{C}$	1.0		5.5	V	
Supply Current	I_{CC}	$V_{TH}+0.2\text{V}$		10	30	μA	
Reset Threshold	V_{TH}	$V_{CC}=3\text{V}$	UIC813-A	2.59	2.63	2.69	V
		$V_{CC}=3.3\text{V}$	UIC813-B	2.88	2.93	3.00	
			UIC813-C	3.02	3.08	3.15	
		$V_{CC}=5\text{V}$	UIC813-D	3.93	4.00	4.08	
			UIC813-E	4.31	4.38	4.47	
			UIC813-F	4.54	4.63	4.72	
Reset Threshold Tempco	V_{TH}			30		ppm/ $^\circ\text{C}$	
Set-up Time	T_S	$V_{CC}=V_{TH}\sim(V_{TH}-100\text{mV})$		20		μs	
Reset Active Timeout Period	t_{RST}	$T_A=0^\circ\text{C}\sim +85^\circ\text{C}$	140	320	560	ms	
RESET Output Voltage-Low	V_{OL}	$V_{CC}=V_{TH}+0.2, I_{SINK}=1.2\text{mA}$			0.3	V	
		$V_{CC}=V_{TH}+0.2, I_{SINK}=3.2\text{mA}$			0.4		
RESET Output Voltage-High	V_{OH}	$1.8\text{V}<V_{CC}<V_{TH}-0.2, I_{SOURCE}=150\mu\text{A}$	$0.8\times V_{CC}$			V	

Notes: 1. Production testing done at $T_A=+25^\circ\text{C}$; limits over temperature guaranteed by design.

2. Devices mounted on FR-4 substrate PC board, 2oz copper, with minimum recommended pad layout.

■ TYPICAL APPLICATION CIRCUIT



UTC assumes no responsibility for equipment failures that result from using products at values that exceed, even momentarily, rated values (such as maximum ratings, operating condition ranges, or other parameters) listed in products specifications of any and all UTC products described or contained herein. UTC products are not designed for use in life support appliances, devices or systems where malfunction of these products can be reasonably expected to result in personal injury. Reproduction in whole or in part is prohibited without the prior written consent of the copyright owner. UTC reserves the right to make changes to information published in this document, including without limitation specifications and product descriptions, at any time and without notice. This document supersedes and replaces all information supplied prior to the publication hereof.